REMARKS

The following remarks are responsive to the Office Action mailed February 7, 2005.

Claims 1-42 were initially presented as filed. After a restriction requirement, Claims 19-33 were withdrawn and Claims 1-18 and 34-42 are currently pending.

Information Disclosure Statements

In reviewing the Official File Wrapper on Private Pair, Applicant notes that seven (7) Information Disclosure Statements were submitted by Applicant and received by the Patent Office as noted below. As the Examiner did not return signed and initialed 1449 forms in the present Office Action, Applicant – by way of courtesy copies – submits the following as Exhibit attachments to the present Amendment:

Exhibit A – A print-out of the File History from the USPTO Private Pair, showing the receipt of seven (7) IDS.

Exhibits B-H – Copies of the 1449 forms submitted by Applicant and received on the following dates: 05-09-2002, 10-11-2002, 03-06-2003, 04-02-2003, 04-16-2003, 07-15-2003 and 02-11-2004 respectively.

Applicant respectfully requests that the Examiner consider the references listed in the attached 1449 forms and return signed and initialed copies in the next Office Action.

Specification

The Examiner has objected to the Abstract as lines 1-2 comprise language which is not favored. Applicant herein amends the Abstract to place it more in line with acceptable language.

Claim Rejection under 35 USC § 102:

Claims 1, 5-7, 10, and 14-16 are currently rejected under 35 USC 102(e) as being anticipated by Weldy (USP 6,804,407).

As to Claim 1, the Examiner specifically finds that:

Weldy discloses a method of converting a plurality of input signals to output signals wherein a function of both unknown recorded signal levels and unknown signal sensitivities makeup the plurality of input signals (see Col. 3, lines 6-10). Weldy also discloses the input signals comprising of three color channels – red, green and blue. (see #S1 and "rgb" of Fig. 1). Weldy discloses sample areas in the form of data values for each color channel of an input signal derived from scanning an image (see Col. 3, lines 38-40). Weldy then discloses the samples to be spatially transformed and passed through a high or low pass filter using weights in certain neighborhoods of pixels (see Col. 3,lines 40-50). Weldy discloses calculating a luminance value formed using samples taken from each channel and the weighting values determined from the above filtering step (see Col. 3, lines 50-52).

The Examiner notes that the Office interprets the operation of filtering the already sampled values in specific pixel neighborhoods of Weldy functionally equivalent to the

determining of a resample area for each color emitter as the weight values are applied to each RGB color value used in calculating an overall luminance in Weldy.

The Examiner further finds that Weldy discloses the weight values derived using one of three methods, two of which involve calculations using fractions including values which represent functions of values located in the neighborhood filtering area and RGB values (see Col. 4-6, lines 33-40). Further, referring to Cols. 5-6, lines 67-5, the weight values k1-k3 are calculated using standard deviation values of each color channel (1-3=RGB, respectively) in the neighborhood pixel, represented by both the numerators and denominators in the fractions of equations 16a-c (see Cols. 5-6, lines 67-5).

The Examiner notes that the Office interprets such numerators and denominators of Weldy functionally equivalent to Applicant's fraction formation. Additionally, the Examiner notes that the Office interprets that the standard deviation values represent the three color channels which at least partially overlap one another as RGB color gamut values commonly overlap one another forming all shades of colors. Weldy also discloses multiplying the weight factors (k1-k3) by each RGB transmittance data point and adding these products together to form a luminance value (see Col. 3, lines 50-57).

As to Claim 1, Applicant respectfully traverses the present rejection.

To see that Weldy does not anticipate the invention of Claim 1, it is useful to compare and contrast the problems being solved by both Weldy and the present invention of Claim 1.

The stated goal and object of Weldy is to "remove essentially all of the image quality degradation" due to image capture methods having potentially non-uniform CFA structures. (Col. 3, lines 22-25). (See also, Col 2, lines 54-55 – "[t]he noise owing to the color filter array is reduced in some colored areas"). (See also Abstract – "eliminate the contribution of [ ] unknown signal sensitivities"). These "channel signal and sensitivities are unknown and vary at each sample location". (Col. 1, lines 8-10).

Weldy's paradigm example is that of a photographic film that employs a color filter array (CFA) structure (see Col. 1, lines 13-22). Weldy notes that the CFA film itself may have "unknown and varying signal and sensitivit[ies]" (Col. 1, lines 14-15). Further, Weldy uses the example of CFA "film" – photographic film that incorporates a color filter array (CFA) to produce color photographs and that the CFA itself "comprises colored resin particles which are **randomly** arranged". (Col. 1, lines 23-25, citing EP 935169 as an example) (**bold** emphasis added).

Once the color photograph is taken (and having possible unknown and varying sensitivities in the color channels), the photograph may be "spatially sampled with a film scanner" (Col. 1, lines 13-15).

Weldy notes that, under certain circumstances:

"it is possible to determine both the amount of signal (silver or other modulating species formed in the photo process as a function of light intensity) formed in spatial coincidence with the total sub-pixel area occupied with similarly colored CFA elements (the relative sensitivity)." (Col. 1, lines 30-35).

To correct for image degradation with the introduction of such signal noise, Weldy does calculate "weighting values" (k-values) in order to alter the image data for output.

However, all three methods for calculating these weighting values disclosed by Weldy **depend and are functions of the input image data**. Starting with Figure 1 of Weldy, this is clearly seen as step S1 is to scan the image data – and based upon that image data, Weldy "forms weighting values (K's)" in step S3. These K's are then employed in step S4 to "form Pseudo Luma" values.

A review of the specification of Weldy confirms the supposition that the K values are dependent upon the input image data:

Method A -- "[a] first method of calculating the values of k[sub i] is to assume a constant color determined from a low-pass filtered version of the measured transmittance values ...". (Col. 4, lines 34-36).

Method B – "[a]n alternative method for calculating the values of k[sub i] is to assume that within a spatial neighborhood the ratios between high-passed measured signals are constant and any deviation from this constancy is owing to CFA modulation. This assumption is realized by modifying the values of k[sub i] so that the high frequency power in the measured transmittance C[sub mi] is minimized" (Col. 4, line 65 to Col. 5, line 5).

Method C – "[y]et another method for calculating the values of k[sub i] is to assume that the standard deviation values SD[sub i] in a neighborhood are made equal by weighting the measured signals by the k[sub i] values subject to the [following]

constraint of equation (5):" (Col. 5, lines 47-51). Applicant notes that the "standard deviation" values are based upon the input image data signals.

Moreover, as the above methods are disclosed, the weighting values of Weldy may vary from pixel position to pixel position depending upon the input image data:

As previously noted, all of the above methods for calculating the weighting values are used subsequently by Weldy for minimizing noise and color error:

"[b]y applying the multi-channel scanning and image processing taught in this specification, it is possible to remove essentially all of the image quality degradation owing to the CFA structure" (Col. 7, lines 11-14).

By contrast, the invention of Claim 1 is **not** concerned with minimizing noise or color error introduced by input image sampling. Instead, the invention of Claim 1 is concerned with effectively remapping image data (e.g. convention, converged RGB image data for RGB stripe system) onto to displays comprising different subpixel formats (e.g. layouts such as Figures 6 or 10, or any other novel layout).

The invention of Claim 1 does calculate fractional values for use in perfoming this remapping – but it does **not** rely nor depend upon the particular input image data to be remapped. The fractional values are determined primarily by the geometric contributions of neighboring implied sample areas for each resample area for "each emitter of each color in the [target] display".

Nowhere in Weldy is there any teaching, suggestion, or disclosure to create fractional values that are based upon the effective remapping of data from a first format onto a display of another format.

Thus, Applicant respectfully disagrees with many findings of the Examiner in his rejection of Claim 1 in view of Weldy. For merely one example, the Examiner states:

> "the office interprets the **operation of filtering** the already sampled values in specific pixel neighborhoods of Weldy **functionally equivalent** to the **determining of a resample area** for each color emitter as the weight values are applied to each rgb color value used in calculating an overall luminance in Weldy." (Office Action at page 3) (**bold** emphasis added).

As discussed above, Weldy's operation of filtering input image data is not functionally equivalent to the above-identified claim limitation of Claim 1. This is so because Weldy does not perform the equivalent function of remapping image data from one subpixel format to another. Indeed, as the filtering operation of Weldy would likely produce different weighting values depending upon the particular image data, there is no practical manner in which the operations of Weldy would achieve a useful remapping of image data from one subpixel format to another – without attendant introduction of color error.

For the foregoing reasons, Applicant respectfully submits that the invention of Claim 1 is not anticipated by Weldy. Applicant respectfully requests that Claim 1 be passed along to allowance.

As Claims 2-9 depend upon allowable Claim 1, Applicant respectfully requests that Claims 2-9 be passed through to allowance.

As to Claim 10, Applicant respectfully avers that Claim 10 is allowable over Weldy for the same rationale as argued for Claim 1 above. Therefore, Applicant respectfully requests that Claim 10 be passed through to allowance.

As Claims 11-18 depend on allowable Claim 18, Applicant respectfully requests that Claims 11-18 be passed through to allowance.

As for Claim 34, Applicant respectfully avers that Claim 34 is allowable over Weldy for the same rationale as argued for Claim 1 above. Therefore, Applicant respectfully requests that Claim 34 be passed through to allowance.

As Claims 35-42 depend on allowable Claim 34, Applicant respectfully requests that Claims 35-42 be passed through to allowance.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully submits that all pending Claims are patentable over the cited art of record and are in condition for allowance. Therefore, Applicant requests the Examiner to reconsider and withdraw the outstanding rejection and pass this application to allowance.

If the Examiner believes a telephone conference would expedite the allowance of the claims, the Examiner is invited to contact Stuart P. Kaler at (707) 824-2487.

Respectfully submitted,

Dated: 7 July 2005 By: Stuart P. Kaler
Stuart P. Kaler
Reg. No. 35, 913

Attachment:
Exhibit A – Printout of File History from Private Pair
Exhibits B-H – Copies of 1449 forms previously submitted